

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An optical apparatus ~~comprising~~comprising:
_____ a frequency stabilized linear HeNe gas laser having a resonant cavity, ~~and optical elements, wherein the resonant cavity is being~~ filled with a gas including a He content and a Ne content, the Ne content comprising a Ne²⁰ isotope and a Ne²² isotope in substantially equal ~~proportions~~proportions; and
_____ ~~wherein the optical elements during operation of the optical apparatus cause at least one optical feedback element which receives light output from the laser and returns at least 0.1% of the light output of the laser to be returned towards the laser.~~
2. (Canceled)
3. (Currently Amended) An interferometric displacement determination device having an optical apparatus ~~comprising~~comprising:
_____ a frequency stabilized linear HeNe gas laser having a resonant cavity, ~~and optical elements, wherein the resonant cavity is being~~ filled with a gas including a He content and a Ne content, the Ne content comprising a Ne²⁰ isotope and a Ne²² isotope in substantially equal ~~proportions~~proportions; and
_____ ~~wherein the optical elements during operation of the optical apparatus cause at least one optical feedback element which receives light output from the laser and returns at least 0.1% of the light output of the laser to be returned towards the laser, the device being any one of a single beam, a plane mirror, a long range, or an optical fibre type.~~
4. (Previously Presented) An interferometric displacement determination device as claimed in claim 3 wherein the Ne²⁰ and Ne²² isotope content is in the ratio of from about 60:40 to about 40:60 respectively.

5. (Previously Presented) An interferometric displacement determination device as claimed in claim 3 wherein the HeNe gas ratio is from about 80:20 to about 90:10 respectively.

6. (Previously Presented) An optical apparatus as claimed in claim 1 wherein the laser achieves a frequency stabilization below 1×10^{-7} (Frequency noise/Absolute frequency) and the optical feedback is in the range of 0.1% to 10% of the light output of the laser.

7. (Previously Presented) An optical apparatus as claimed in claim 1 wherein the apparatus or the device includes an optical fibre element.

8. (Previously Presented) An optical apparatus as claimed in claim 6 wherein the method of frequency stabilization employed is modal control.

9. (Previously Presented) An optical apparatus as claimed in claim 8 wherein the modal control is control of the ratio of the intensities of two laser modes.

10. (Currently Amended) An interferometric displacement determination device having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, ~~and optical elements, wherein the resonant cavity is being~~ filled with a gas including a He content and a Ne content, the Ne content comprising a Ne²⁰ isotope and a Ne²² isotope in substantially equal ~~proportions proportions;~~ and

~~_____ wherein the optical elements during operation of the optical apparatus cause at least one optical feedback element which receives light output from the laser and returns at least 0.1% of the light output of the laser to be returned towards the laser.~~

11. (Currently Amended) A polarization measurement device having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, ~~and optical elements, wherein the resonant cavity is being~~ filled with a gas including a He

content and a Ne content, the Ne content comprising a Ne^{20} isotope and a Ne^{22} isotope in substantially equal ~~proportions~~ proportions; and

~~_____ wherein the optical elements during operation of the optical apparatus cause at least one optical feedback element which receives light output from the laser and returns at least 0.1% of the light output of the laser to be returned towards the laser.~~

12. (Currently Amended) A spectroscopic analysis apparatus having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, and ~~optical elements, wherein the resonant cavity is being~~ filled with a gas including a He content and a Ne content, the Ne content comprising a Ne^{20} isotope and a Ne^{22} isotope in substantially equal ~~proportions~~ proportions; and

~~_____ wherein the optical elements during operation of the optical apparatus cause at least one optical feedback element which receives light output from the laser and returns at least 0.1% of the light output of the laser to be returned towards the laser.~~

13. (Currently Amended) A heterodyne frequency measurement device having an optical apparatus comprising, a frequency stabilized linear HeNe gas laser having a resonant cavity, and ~~optical elements, wherein the resonant cavity is being~~ filled with a gas including a He content and a Ne content, the Ne content comprising a Ne^{20} isotope and a Ne^{22} isotope in substantially equal ~~proportions~~ proportions; and

~~_____ wherein the optical elements during operation of the optical apparatus cause at least one optical feedback element which receives light output from the laser and returns at least 0.1% of the light output of the laser to be returned towards the laser.~~